

REMARKS

Reconsideration of this application is respectfully requested. Claim 1 has been amended to incorporate the subject matter of dependent claims 3 and 6. Accordingly, claims 3 and 6 have been canceled without prejudice, and the dependency of claim 4 has been amended. The transitional phrase “comprising” in claims 1 and 20 has been amended to “consisting essentially of.” Claim 5 has also been canceled without prejudice. Claims 24 and 25 have been added. These claims recite weight percents for components (a)-(c). Support for these claims can be found in the specification at, for example, page 11, Table 1. Claim 22 has been amended to specify that the recited ratio is of a mixture of DMDMH and MMDMH to dehydroacetic acid or a salt thereof (component “(c)”). Support for this amendment can be found in the specification at, for example, page 11, lines 6-9. No new matter has been added to the application.

Claims 1, 2, 4, and 7-25 are pending. Because claims 12-19 have been withdrawn, only claims 1, 2, 4, 7-11, and 20-25 are at issue.

Written Description Rejection

Claim 22 has been rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement because the recited ratio of a mixture of DMDMH and MMDMH to dimethylhydantoin is not supported in the specification.

The reference in claim 22 to dimethylhydantoin, component “(b)”, was mistaken. Claim 22 has been amended to recite the ratio of the mixture of DMDMH and MMDMH (component “(a)”) to dehydroacetic acid or a salt thereof (component “(c)”). The recited ratio of these components is supported in the specification. *See, e.g.*, page 11, lines 6-9. Withdrawal of this rejection is respectfully requested.

Obviousness Rejections

Claims 1-3, 7, 10, and 23 have been rejected under 35 U.S.C. § 103(a) as obvious over Hahn et al. (U.S. Patent No. 5,804,203) in view of Dodd et al. (U.S. Application No. 2002/0176879).

Claim 1 has been amended to incorporate the subject matter of claim 6, which has not been rejected over Hahn and Dodd. Accordingly, this rejection is moot.

Claims 1-4, 6-11, and 20-22 have been rejected under 35 U.S.C. § 103(a) as obvious over Rothenburger et al. (U.S. Patent No. 6,121,302) in view of Willingham (U.S. Patent No. 5,424,324). Claims 1-4, 6-11, and 20-23 have been rejected under 35 U.S.C. § 103(a) as obvious over Farina et al. (U.S. Patent No. 5,405,862) in view of Trinh et al. (U.S. Patent No. 6,682,694).

Claims 1 and 20 have been amended so that the compositions consist essentially of the recited components. Therefore, the compositions may not include additional components that “materially affect the basic and novel characteristics” of the compositions. *See In re Herz*, 557 F.2d 549, 551-2 (CCPA 1976); MPEP § 2111.03.

As the Examiner acknowledges, Rothenburger requires one or more isothiazolone compounds, which are highly toxic. The compositions of amended claims 1 and 20 cannot include an isothiazolone because to do so would “materially affect the basic and novel characteristics” of the compositions. Thus, the claims are allowable over Rothenburger and Willingham because they do not teach a composition that consists essentially of the recited components.

Furthermore, the synergistic antimicrobial activity of the presently claimed composition was unexpected and would not have been obvious to the skilled artisan.

A preservative challenge test was performed against mixed bacteria by measuring the levels of Glydant® 2000 (a 70% solution of hydantoin species including about 36% dimethyloldimethylhydantoin, about 29% monomethyloldimethylhydantoin, and about 5%

dimethylhydantoin) and dehydroacetic acid (DHA) that were effective against the bacteria. A mixed bacteria was added to test samples of formulations having varying levels of the individual components, and the test samples were incubated. At 0, 7, and 14 days, diluted aliquots of the test samples were incubated on tryptic soy agar plates. Readings of the total number of colony forming units per gram (cfu/g) were made on each sample. *See* specification at page 15, line 13 to page 16, line 6.

The results, illustrated in Table 3 in the specification, show that, individually, 0.05% of Glydant® 2000 and 0.20% of DHA, and a mixture of 0.025% Glydant® 2000 and 0.075% DHA, each achieved less than 10 cfu/g after 14 days. The calculated value of synergism ($Q_A/Q_A + Q_B/Q_B$) was 0.87. *See* Table 4 of the specification. When the value is less than one, the mixture is synergistic. *See* page 14, lines 5-16 of the specification. Accordingly, the combination of the components demonstrated a synergistic effect.

Evidence of greater than additive (i.e., synergistic) effect is persuasive of nonobviousness where the synergy was not expected. *See Ex parte The NutraSweet Co.*, 19 USPQ2d 1586, 1589 (Bd. Pat. App. & Inter. 1991); *see also* MPEP § 716.02(a) I. None of the cited references disclose or suggest that a synergistic effect would be achieved by combining the components as presently claimed.

The Examiner has acknowledged the existence of synergism described in the specification, but has stated that the previously presented claims “are not commensurate in scope [with the surprising and unexpected results]. For instance, the instant claims do not recite any weight percent of any of the components.” As noted above, the claims have been amended to recite weight percents of the components. Applicants respectfully submit that the unexpected results are commensurate in scope with the amended claims.

For the above reasons, the pending claims are not obvious over the cited references. Withdrawal of the rejections is respectfully requested.

New Claims

New claims 24 and 25 specify that the composition comprises about 5 to about 95 wt% of the aldehyde donor, up to about 30 wt% of the stabilizer, and about 0.5 wt% to about 95 wt% of dehydroacetic acid.

None of the cited references discloses or suggests the particular components selected in the amounts specified by the amended claims. The Examiner has not cited any other rationale in the prior art for selecting the particular components and amounts. Accordingly, these claims allowable over the cited references.

CONCLUSION

In view of the above amendments and remarks, applicants believe the pending application is in condition for allowance. If there are any remaining issues that the Examiner believes could be resolved through either a Supplemental Response or an Examiner's Amendment, the Examiner is respectfully requested to contact the undersigned at the telephone number indicated below.

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Respectfully submitted,

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